

HP 525 802.11ac Dual Radio Access Point Series



Key features

- Two-spatial stream 802.11ac MIMO Access Point with optional external antennas
- Up to 866 Mbps on the 802.11ac radio and 300 Mbps on the 2.4 GHz 802.11n radio
- Built-in spectral analysis scans the 2.4 GHz and 5 GHz bands to identify sources of RF interference
- Comprehensive WLAN security with intrusion detection and prevention offers threat protection
- Includes limited lifetime hardware warranty 2.0 with 24x7 phone support for three years at no extra cost

Product overview

HP 525 802.11ac Dual Radio Access Point Series bring 866 Mbps performance, faster application processing, and increased range to 802.11 clients over 802.11n access points. Ideal for dense client environments and high bandwidth applications, the access points can be powered by Power over Ethernet (PoE) and offer full compatibility with legacy 802.11 clients and existing HP Unified wireless controllers.

The access points provide Radio Frequency spectrum analysis with detection and classification of non-IEEE 802.11 interference and has the ability to automatically avoid interference. Wireless security is comprehensive when it operates with a controller along with integrated wireless IDS/IPS. It provides support for internal and external authentication, authorization, and accounting (AAA) servers, offers built-in stateful firewall, allows per-user VLAN mapping, and facilitates authentication.

Features and benefits

Management

- Wi-Fi Clear Connect

Provides a system-wide approach to improving WLAN reliability by proactively determining and adjusting to changing RF conditions; helps optimize WLAN performance by detecting interference from Wi-Fi and non-Wi-Fi sources using spectrum analysis capabilities built into the access points, identifies rogue activity, and takes decisions at a system-wide level.

- Advanced radio resource management

- Automatic radio power adjustments

Includes real-time power adjustments based on changing environmental conditions and signal coverage adjustment

- Automatic radio channel

Provides intelligent channel switching and real-time interference detection

- Intelligent client load balancing

Determines number of clients across neighboring APs and adjusts client allocation to balance the load

- Airtime fairness

Provides equal RF transmission time for wireless clients Spectrum analysis

- Power/frequency spectrum analysis

Measures noise from IEEE 802.11 remote sources

- Signal detection/classification

Identifies source of RF interference, for example, Bluetooth®, cordless phones, and microwave ovens

- Evaluation of channel quality

Helps detect severe channel degradation and improves the reporting of poor RF performance

- Integrated wireless IDS/IPS

Detects, locates, and mitigates unknown and rogue devices (see controller data sheet for details)

- Access point management via a wireless controller

Provides secure Web browser (SSL and VPN), command-line interface, SNMP v2c, SNMP v3, MIB-II with traps, and RADIUS Authentication Client MIB (RFC 2618); offers embedded HTML management tool with secure access (SSL and VPN); implements scheduled configuration and firmware upgrades from a central controller

- HP Intelligent Management Center and Wireless Services Manager Software

Provides central management for discovery, logging, status, and configuration management

- Diagnostics

Records association, authentication, and DHCP events in client event log; packet capture tool for Ethernet and IEEE 802.11 interfaces (PCAP format); includes data rate matrix

- Compatible with HP Unified Switches, Controllers, and Module

- Refer to the HP Access Point—Controller Compatibility Matrix at h20195.www2.hp.com/V2/GetDocument.aspx?docname=4AA5-0345ENW&cc=us&lc=en

- Refer to the release notes for minimum version numbers required.

Quality of Service (QoS)

- Rate limiting
 - Supports per-wireless client ingress-enforced maximums and per-wireless client, per-queue enabled minimums
- Centralized traffic
 - Maintains Layer 2 and Layer 3 QoS settings when using centralized traffic or guest access
- IEEE 802.1p prioritization
 - Delivers data to devices based on the priority and type of traffic Wireless
 - L2/L3/L4 classification
 - Supports IEEE 802.1p VLAN priority, SpectraLink SVP, and DiffServ
 - Multiple SSIDs per radio
 - Wi-Fi MultiMedia (WMM), IEEE 802.11e EDCF, and Service-Aware priority

Connectivity

- IEEE 802.3 PoE
 - Simplifies deployment and dramatically reduces installation costs by helping eliminate the time and cost involved in supplying local power at each access point location
 - Both radios operate at full performance with 802.11af PoE
- Auto-MDIX
 - Adjusts automatically for straight-through or crossover cables on the Ethernet interface

Mobility

- Two spatial stream MIMO technology
 - Provides the latest in Wi-Fi technology, which allows for 866 Mbps in the 5 GHz frequency band and 300 Mbps in the 2.4 GHz band of signaling
- Band steering
 - Redirects 5 GHz-capable clients automatically to the less-congested 5 GHz spectrum
- HP 525 embedded antennas
 - Provides excellent coverage through use of embedded high-gain antennas (4 dBi antenna at 2.4 GHz and 5 dBi antenna at 5 GHz); no need for the added cost of external antennas
- External antenna
 - Optional external antenna for better antenna placement via RP-SMA connectors
- Anywhere, anytime wireless coverage
 - Dual-radio IEEE 802.11b/g/n and 802.11a/n/ac access point; per-radio software-selectable configuration of frequency bands; self-healing, self-optimizing local mesh that extends network availability; Wi-Fi Alliance certifications for interoperability with all IEEE 802.11a/b/g/n/ac client devices

- Medical standards
 - Meets the European EN60601-1-2 standard for healthcare
- Multiple SSIDs
 - Up to 16 SSIDs per radio, each with unique MAC address, configurable SSID broadcasts
 - Individual security and QoS profiles
 - Configurable DTIM and minimum data rate
 - Each mapped to separate IEEE 802.1Q VLANs
 - WMM and/or WMM-PS
 - Security filter
- AP client access control functions
 - Offers IEEE 802.1X authentication using EAP-SIM, EAP-FAST, EAP-TLS, EAP-TTLS, and PEAP
 - Delivers MAC address authentication using local or RADIUS access lists
 - Provides RADIUS AAA using EAP-MD5, PAP, CHAP, and MS-CHAPv2
 - Supports RADIUS Client (RFC 2865 and 2866) with location-aware support
 - Provides Layer 2 wireless client isolation

Security

- Integrated IDS support
 - Automated AP and client classification
 - Reduces manual effort (administrator can override AP classification)
 - Comprehensive detection capabilities
 - Detects a wide range of attacks
 - Flexible event reporting
 - Enables configuration of events that result in notifications
 - Location tracking capabilities
 - Helps identify the rogue device location
 - Flexible deployment models
 - Supports time slicing or dedicating a radio to detect full-time
 - See the controller data sheet for more detail IEEE 802.1X support
- Choice of IEEE 802.11i, WPA2, or WPA
 - Locks out unauthorized wireless access by authenticating users prior to granting network access; robust Advanced Encryption Standard (AES) or Temporal Key Integrity Protocol (TKIP) encryption secures the data integrity of wireless traffic
- TKIP/WEP encryption
 - Is supported only on legacy IEEE 802.11a/b/g clients as it has been deprecated from the IEEE 802.11n and 802.11ac standards
- Local wireless bridge client traffic filtering
 - Prevents communication between wireless devices associated with the same access point

Additional information

- RFC and standards

Refer to the controller data sheet for details

Warranty and support

- Limited Lifetime Warranty 2.0

Advance hardware replacement for as long as you own the product with next-business-day delivery (available in most countries)

- Electronic and telephone support

24x7 telephone support is available from HP for the first three years; limited electronic and business hours telephone support is available from HP for the entire warranty period; to reach our support centers, refer to hp.com/networking/contact-support; for details on the duration of support provided with your product purchase, refer to hp.com/networking/warrantysummary

- Software releases

To find software for your product, refer to hp.com/networking/support; for details on the software releases available with your product purchase, refer to hp.com/networking/warrantysummary

HP 525 802.11ac Dual Radio Access Point Series

Specifications

	HP 525 Wireless Dual Radio 802.11ac (AM) Access Point (JG993A) HP 525 Wireless Dual Radio 802.11ac (WW) Access Point (JG994A) HP 525 Wireless Dual Radio 802.11ac (JP) Access Point (JG995A) HP 525 Wireless Dual Radio 802.11ac (IL) Access Point (JG996A) HP 525 Wireless Dual Radio 802.11ac (AM) 8-unit Eco-pack Access Points (JG997A) HP 525 Wireless Dual Radio 802.11ac (WW) 8-unit Eco-pack Access Points (JG998A)
I/O ports and slots	1 RJ-45 autosensing 10/100/1000 PoE port (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3af PoE); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only 1 RJ-45 autosensing 10/100/1000 port (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only
Additional ports and slots	1 RJ-45 serial console port
AP characteristics	
Radios (built-in)	802.11b/g/n, a/n/ac
Radio operation modes	Client access, Local mesh, Packet capture
AP operation modes	Controlled
Wi-Fi Alliance Certification	a/b/g/n/ac Wi-Fi Certified
Antenna	(2) 4 dBi 2.4 GHz and (2) 5 dBi 5 GHz omnidirectional antennas
Number of internal antennas	4
Number of external antennas	4
Physical characteristics	
Dimensions	8.66(w) x 8.66(d) x 2.36(h) in (22 x 22 x 6 cm)
Weight	1.65 lb (0.75 kg) mounting bracket
Memory and processor	Single core @ 720 MHz, 128 MB flash, 256 MB SDRAM
Mounting and enclosure	Indoor, plenum rated; Includes ceiling/wall mount kit as well as two ceiling mounting clips
Environment	
Operating temperature	32°F to 113°F (0°C to 45°C)
Operating relative humidity	5% to 95%, noncondensing
Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
Nonoperating/Storage relative humidity	5% to 95%, noncondensing

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HP 525 Wireless Dual Radio 802.11ac (IL) Access Point (JG996A)
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Electrical characteristics

Description IEEE 802.3af PoE compliant for Gigabit Ethernet
Maximum power rating 12.9 W

Notes

Optional 48V DC power supply

Frequency band and operating channels

Americas
2.412 - 2.462 GHz (1 - 11 channels)
5.180 - 5.320 GHz (36 - 64 channels)
5.500 - 5.700 GHz (100 - 140 (excluding 5600-5650 MHz) channels)
5.745 - 5.825 GHz (149 - 165 channels)

European Union
2.412 - 2.472 GHz (1 - 13 channels)
5.180 - 5.320 GHz (36 - 64 channels)
5.500 - 5.700 GHz (100 - 140 (excluding 5600-5650 MHz) channels)

Rest of World (Actual channels designated by selecting country in UI)
2.412 - 2.472 GHz (1 - 13 channels)
5.180 - 5.320 GHz (36 - 64 channels)
5.500 - 5.700 GHz (100 - 140 channels)
5.745 - 5.825 GHz (149 - 165 channels)

Taiwan
2.412 - 2.462 GHz (1 - 11 channels)
5.280 - 5.320 GHz (56 - 64 channels)
5.500 - 5.700 GHz (100 - 140 (excluding 5600-5650 MHz) channels)
5.745 - 5.825 GHz (149 - 165 channels)

Japan
2.412 - 2.472 GHz (1 - 13 channels)
5.180 - 5.320 GHz (36 - 64 channels)
5.500 - 5.700 GHz (100 - 140 channels)

Israel
2.412 - 2.472 GHz (1 - 13 channels)
5.180 - 5.320 GHz (36 - 64 channels)

Radio FCC Part 15.247; FCC Part 15.407 (US); RSS-210 (Canada); EN 300 328; ARIB STD-T66; IDA Registration (Singapore); RCR STD-33; ARIB STD-T71 (Japan); EN 301 893 (EU); KCC approval (Korea)

Safety UL 2043; UL 60950-1; IEC 60950-1; EN 60950-1; CAN/CSA-C22.2 No. 60950-1

Medical EN60601-1-2

RF Exposure FCC Bulletin OET-65C; RSS-102; CFR 47, Part 2, Subpart J; ANSI/IEEE C95.1 (99); Ministry of Health Safety Code 6; Australian Radiation Protection Std.

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Features

Dual radio: IEEE 802.11a/n/ac for very high-throughput applications and IEEE 802.11b/g/n for legacy support applications

- Integrated antennas for both IEEE radios, supporting two spatial streams and 2x2 MIMO
- Four embedded antennas
- Both radios operate at full power and full performance on IEEE 802.3af PoE/Gigabit Ethernet
- External antenna, optional

Emissions

EN 55022 Class B; EN 301 489-1; EN 301 489-17; ICES-003 Class B; FCC Part 15, Class B

Notes

Supported data rates

- 802.11b: 1, 2, 5.5, 11 Mbps
- 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
- 802.11n: 6.5 to 300 Mbps (MCS0 to MCS15, 1 and 2 spatial streams)
- 802.11ac: 6.5 Mbps to 866 Mbps (MCS0 to MCS9, 1 and 2 spatial streams)
- 802.11n high-throughput (HT) 20/40
- 802.11ac very high throughput (VHT) 20/40/80
- 802.11n/ac packet aggregation A-MPDU and A-MSDU

The HP 525 access point power information listed includes the embedded antenna. Review the HP documentation for your AP to understand the maximum output setting for your AP based on your country's regulations.

Two spatial stream AP, supporting 866 Mbps in the 5GHz band and 300 Mbps in the 2.4GHz band.

Maximum transmit power varies by country.

Regulatory model number: BJNGA-FB0004

Services

Refer to the HP website at hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

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Radio characteristics:

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Note

This transmit power data is EIRP and includes the embedded antennas. The receiver sensitivity also includes the antenna gain.

IEEE 802.11ac 5GHz @ 80MHz channel

Data rate	MCS9 - 866 Mbps	MCS0 - 65 Mbps
Receiver sensitivity	-64 dBm	-89 dBm
Transmit power	22 dBm	27 dBm

IEEE 802.11ac 5GHz @ 40MHz channel

Data rate	MCS9 - 400 Mbps	MCS0 - 30 Mbps
Receiver sensitivity	-67 dBm	-92 dBm
Transmit power	22 dBm	27 dBm

IEEE 802.11n 5GHz @ 40MHz channel

Data rate	MCS15 - 300 Mbps	MCS8 - 30 Mbps
Receiver sensitivity	-72 dBm	-92 dBm
Transmit power	24 dBm	27 dBm

IEEE 802.11n 5GHz @ 20MHz channel

Data rate	MCS15 - 144.4 Mbps	MCS8 - 14.4 Mbps
Receiver sensitivity	-75 dBm	-95 dBm
Transmit power	24 dBm	27 dBm

IEEE 802.11n 2.4GHz @ 40MHz channel

Data rate	MCS15 - 300 Mbps	MCS8 - 30 Mbps
Receiver sensitivity	-72 dBm	-91 dBm
Transmit power	26 dBm	26 dBm

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IEEE 802.11n 2.4GHz @ 20MHz channel

Data rate	MCS15 - 144.4Mbps	MCS8 - 14.4 Mbps
Receiver sensitivity	-75 dBm	-95 dBm
Transmit power	26 dBm	26 dBm

IEEE 802.11a 5GHz

Data rate	54 Mbps	6 Mbps
Receiver sensitivity	-78 dBm	-95 dBm
Transmit power	25 dBm	27 dBm

IEEE 802.11b/g 2.4GHz

Data rate	54 Mbps	11 Mbps	6 Mbps	1 Mbps
Receiver sensitivity	-78 dBm	-93 dBm	-95 dBm	-98 dBm
Transmit power	26 dBm	26 dBm	26 dBm	26 dBm

Standards and Protocols

(applies to all products in series)

Mobility	IEEE 802.11a High Speed Physical Layer in the 5 GHz Band	IEEE 802.11b Higher-Speed Physical Layer Extension in the 2.4 GHz Band	IEEE 802.11h Dynamic Frequency Selection
	IEEE 802.11ac WLAN Enhancements for Very High Throughput	IEEE 802.11d Global Harmonization	IEEE 802.11i Medium Access Control (MAC) Security Enhancements
		IEEE 802.11g Further Higher Data Rate Extension in the 2.4 GHz Band	IEEE 802.11n WLAN Enhancements for Higher Throughput

HP 525 802.11ac Dual Radio Access Point Series accessories

Power Supply

HP 1-port Power Injector (J9407B)
HP Gigabit IntelliJack 48V Power Supply (JD055B)

External Antenna

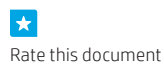
HP Indoor Omnidirectional Dual Band 2.5/6dBi MIMO 4 Element Antenna (JG696A)

Learn more at
hp.com/networking



HP access points and access devices are Wi-Fi Certified, providing our customers with the assurance that these products have met and passed the rigorous interoperability testing performed by the Wi-Fi Alliance Organization. See the Specifications section of this series for more information.

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